CROSSING SAFETY IMPROVEMENT PROGRAM

FY 2001-2005

PROPOSED GRADE CROSSING PROTECTION FUND
PROJECTS FOR LOCAL ROADS AND STREETS

ILLINOIS COMMERCE COMMISSION
APRIL, 2000

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INTRODUCTION

The Illinois Commerce Commission has the statutory responsibility for improving safety at public highway-rail crossings in the State of Illinois. Currently, there are 9,015 grade level crossings in Illinois, of which 926 are on state roads and 8,089 are on local roads. Illinois also has 2,795 grade separated (bridge) crossings. Another 5,142 grade crossings are on private property, which are not under the jurisdiction of the state (there are also 166 private bridge structures). Nationally, Illinois is second only to Texas in the total number of railroad crossings.

The cost of improvements at public crossings ordered by the Illinois Commerce Commission are borne by the state, the railroads, and local governments. On state roads, the Illinois Department of Transportation (IDOT) pays the majority of the costs through the State Road Fund. For local roads, the legislature created the Grade Crossing Protection Fund (the Fund) to bear the majority of the costs of improvements.

RAILROAD CROSSING SAFETY — THE THREE E's

Illinois is a key hub in the nation's transportation system. With nearly 8,000 miles of railroad track, Illinois' rail system is the country's second largest. Illinois also has the nation's third largest highway system, with 138,000 miles of highways, streets, and roads and more than 25,000 bridges. Both the rail and highway systems are among the most heavily traveled in the nation, with much of the traffic concentrated in the Chicago metropolitan region. There, the urban mass transit systems serve an average of nearly 600 million passengers a year over an extensive network of bus and rail routes.

Keeping the grade crossing portion of this transportation network operating safely and efficiently involves local, state, and federal government agencies as well as the private sector. The tools used by public and private agencies to keep Illinois crossings safe are Education, Engineering and Enforcement - the three E's of crossing safety.

Education: The Operation Lifesaver program is a public-private partnership designed to increase public awareness of highway-rail grade crossing hazards. It also strives to improve driver and pedestrian behavior at railroad crossings by encouraging compliance with traffic laws relating to crossing signs and signals.

Enforcement: This vital part of the crossing safety program is essential to providing a consistent message to the public as to Illinois law. Existing traffic and trespass laws provide for the issuance of fines (up to $500) or community service to persons crossing railroad tracks after the warning signals have activated.

Engineering: Well designed and appropriate grade crossing safety improvements are also critical to reducing collisions. The Commission orders physical and system improvements, including the installation and upgrading of grade crossing warning signs and signals and, where warranted, the construction or reconstruction of grade separations. While education and enforcement are absolutely essential, the focus of this report is the funding of capital improvements to further enhance railroad crossing safety on local roads.

RAILROAD CROSSING SAFETY FUNDING

The Grade Crossing Protection Fund, appropriated to the Illinois Department of Transportation and administered by the Illinois Commerce Commission, was created by the General Assembly to assist local jurisdictions (counties, townships and municipalities) in paying for safety improvements at railroad crossings on local roads. Monies from the Fund cannot be used for crossing safety improvements on the state road or highway system. Those improvements are funded directly by the Illinois Department of Transportation. Each month $2.25 million in state motor fuel tax receipts is transferred from the Motor Fuel Tax Fund to the Grade Crossing Protection Fund. This amount, which now includes an additional $9 million in annual funding received under the Illinois FIRST initiative, provides $27 million annually to be used for crossing safety improvements on local roads. The Fund is used to help pay for the following types of projects:

- **Warning device upgrades:** Installation of automatic flashing light signals and/or gates and/or signal circuitry improvements at existing at-grade crossings;
- **Grade separations - new and reconstructed:** Construction, reconstruction/repair of a highway located over or under railroad tracks;
- **Grade separations vertical clearances:** Lowering the highway pavement surface under a railroad underpass to improve vertical clearance for motor vehicles;
- **Interconnects:** Upgrading the circuitry at grade crossings where warning signals are connected to adjacent traffic signals so that the two systems operate in a synchronized manner;
- **Approaches:** Improvements to the portion of the public roadway directly adjacent to the crossing surface;


Cantilever lights with long arm gates

- **Connecting roads:** Construction of a roadway between a closed crossing and an adjacent open, improved crossing; and
- **Wayside monitoring devices:** Sensors in the circuitry of grade crossing warning equipment which immediately provide notification to railroads of any failures in warning equipment operations.

Depending on the nature of the project, the cost of railroad crossing safety improvements can vary substantially. A standard installation of gates with automatic flashing light signals on a two lane road costs approximately $150,000. Additional costs for road improvements could typically range from $2,000 to $25,000 depending on the road type and location. Grade separation structures are very costly; an underpass can cost from $400,000 for pavement lowering to $5 million for a total reconstruction project. A new underpass could cost as much as $10 million. Bridges over railroads can range from $400,000 for a rural structure to $40 million for a multi-lane multi-railroad urban structure. Typically, the Fund pays up to 60% of the cost for grade separation projects and 85% to 95% for grade crossing improvements. When those costs are multiplied by the number of crossings in need of improvement the challenge of allocating funds to best serve the public interest becomes apparent.

CROSSING SAFETY IMPROVEMENT PROJECTS

This report presents the railroad crossing safety capital improvements the Commerce Commission staff proposes for funding during FY 2001 and also looks ahead to the projects contemplated for the years FY 2002 - FY 2005. In all cases it is assumed that any required local funding match will be available.

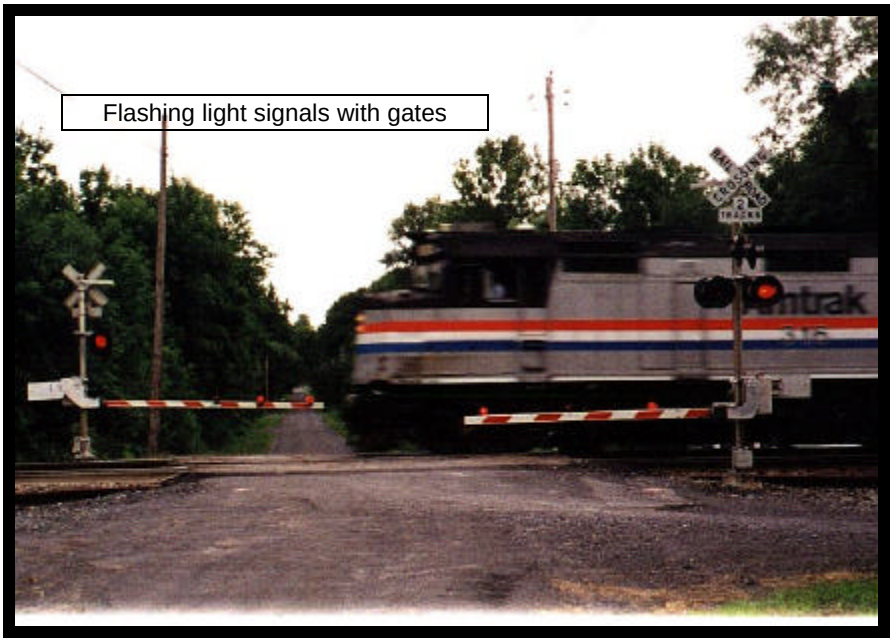
The Fiscal Year 2001 (July 1, 2000 through June 30, 2001) project list includes, almost exclusively, capital improvement projects which local governments or railroads have previously submitted to the Commission for evaluation and approval. The out-year plans include projects based on the following established priorities or themes:

- Interconnected Crossings:
  The Commission and Illinois DOT are continuing a program of improvements at grade crossings that have interconnected railroad and highway traffic warning signals. The Fox River Grove 1995 tragedy pointed out the need to ensure adequate clear-out time for vehicles at the 260 interconnect grade crossings throughout the state. Illinois has been the national leader in upgrading this type of crossing.

- High Collision History:
  In developing project lists each year, the Commission places a high priority on upgrading crossings which have a pronounced accident history or which have a high predictive value for future collisions.

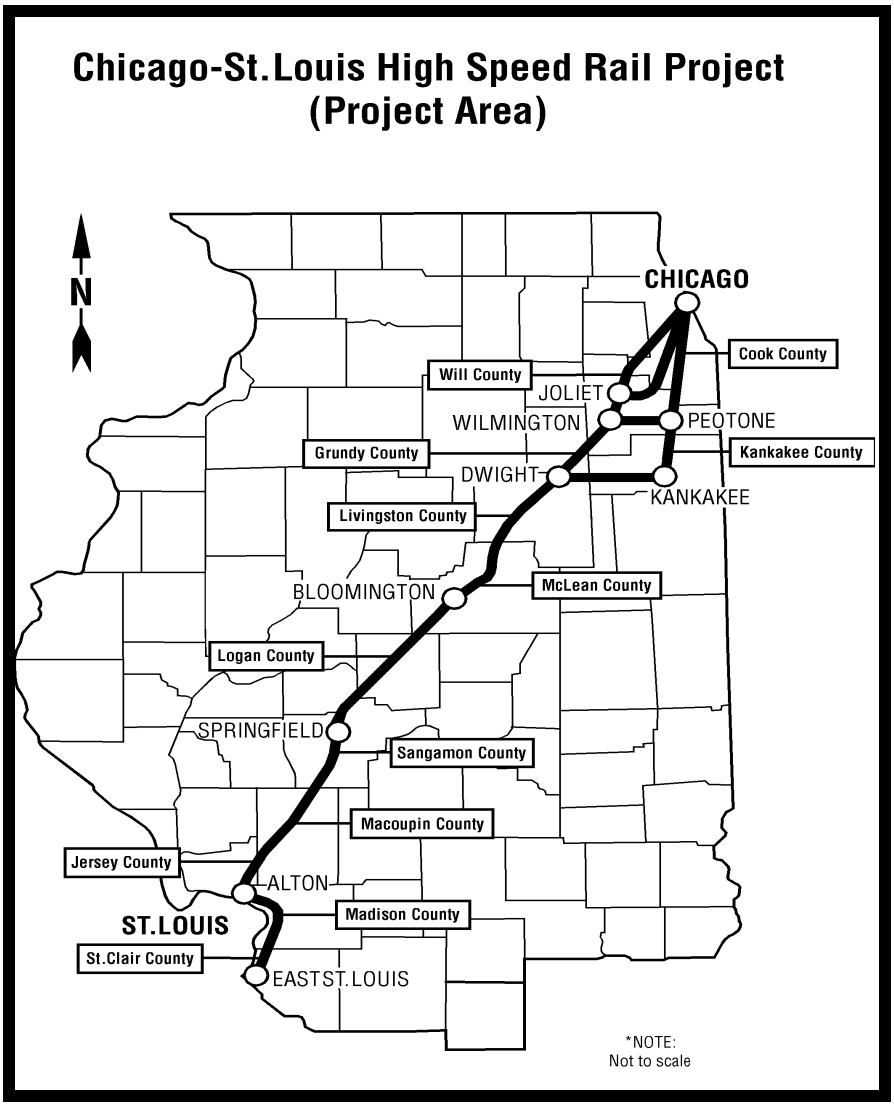
- Strategic Bridges:
  The Commission is endeavoring to find locations where crossing blockages cause substantial motorist or emergency vehicle delay, or where heavy truck traffic represents a heightened threat of grade crossing collisions. This year's program provides funding for 44 bridge projects throughout the state over the next five years.

- Rail Corridors:
  Upgrading crossings in corridors is a sound way to use crossing safety funds efficiently because signal crews are able to improve a series of crossings in a short period of time. The Commission is placing a priority on this concept because in such corridors rail passengers, in addition to vehicle occupants, are put at risk during a grade crossing collision.



Flashing light signals with gates

- High Speed Rail:
  A high priority over the next five years is to ensure that there is adequate and appropriate crossing protection on the Chicago - St. Louis route that IDOT has selected for 110 mph trains. The Commission will provide a substantial investment over the next five years to this project.



FY 2001 PLAN

It is estimated that in FY 2001 the Commission will consider safety improvement projects for 632 crossings in 33 counties. Projects which are expected to be undertaken during FY 2001 are listed in Appendix 1.

In FY 2001, the Commission will also fund and field test two experimental crossing safety projects in three locations in the state. First, a stationary automated horn warning system, which directs the warning sound toward oncoming vehicle traffic as the train is approaching the crossing, will be installed at nine crossings in Mundelein (Lake County). These warning devices will be a supplement to the existing flashing light signals, gates and warning bells. The second experimental project involves the design and installation of four quadrant gates utilizing a new vehicle detection system, which will reduce the possibility of vehicles inadvertently being caught between the lowered gates. Locations in Springfield (Sangamon County) and Maywood (Cook County) have been tentatively selected as the sites

for this project. Both the horn and the gate systems will be evaluated for possible adoption as warning device standards. In addition, the Commission will also set aside approximately $1 million in contingency funds to address emergency projects which may require rapid resolution.

Projects currently planned for FY 2001 are summarized in Table A.

TABLE A
FY 2001 Projects by Project Type
Total Estimated Grade Crossing Protection Fund Cost

PROJECT TYPE	CROSSINGS	$MILLIONS
Bridge Projects	11	45.7
Grade Crossing Improvement Projects	71	7.1
Remote Monitors	466	1.1
Interconnects	3	0.7
Experimental Safety Projects	11	1.0
Emergency Safety Improvements		1.0
High Speed Rail Crossing Improvements[1]	70	2.0
([1]Mazonia to Springfield portion of CHI-STL HSR Corridor)		
Total	**632**	**58.6**

FY 2002 - 2005 PLAN

Projects which are expected to be undertaken in Fiscal Years 2002-2005 are listed in Appendix 2. For those four years, the Commission's staff anticipates that projects totaling approximately $94 million and affecting more than 3,800 crossings in 48 counties will be submitted to the Commission for its consideration. Those projects are summarized in Table B.

TABLE B
FY 2002 - 2005 Projects by Project Type
Total Estimated Grade Crossing Protection Fund Cost

PROJECT TYPE	CROSSINGS	$MILLIONS
Bridge Projects	23	44.2
Grade Crossing Improvement Projects	225	21.4
Remote Monitors	3,492	6.1
Interconnects		
Experimental Safety Projects		2.4
Emergency Safety Improvements		4.0
High Speed Rail Crossing Improvements1	70	16.0
(1Mazonia to Springfield portion of CHI-STL HSR Corridor)		
Total	**3,810**	**94.1**

ACTIVE PROJECTS

There are currently 963 active improvement projects in 43 counties throughout the state, which are summarized in Table C below and listed individually in Appendix 3. By the end of FY 2000, staff expects that the Commission will order an additional 73 projects in 24 counties. Appendix 4 shows the detail on the those projects staff reasonably believes will be ready for Commission order before the end of FY 2000.

TABLE C
Active Projects by Project Type
Total Estimated Grade Crossing Protection Fund Cost

PROJECT TYPE	CROSSINGS	$MILLIONS
Bridge Projects	32	61.0
Grade Crossing Improvement Projects	105	13.9
Remote Monitors	815	1.4
Interconnects	6	2.6
Experimental Safety Projects	5	0.7
Emergency Safety Improvements	0	0
Total	**963**	**79.6**

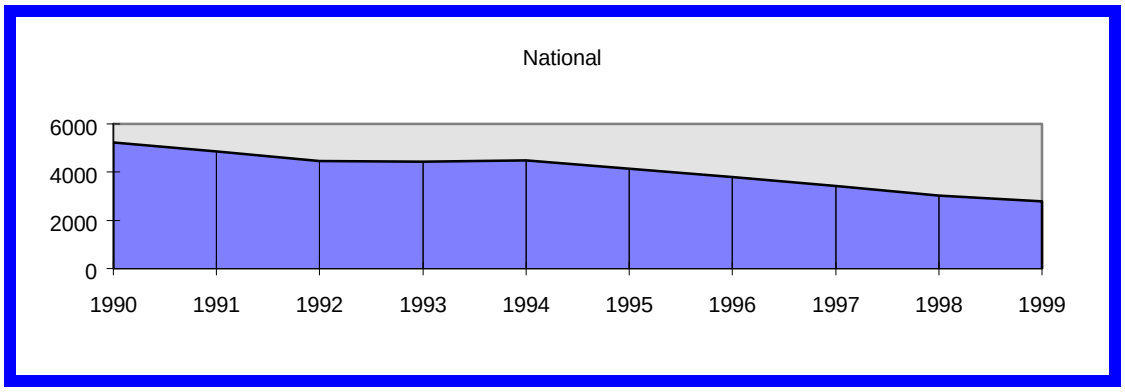
FRA WHISTLE RULE

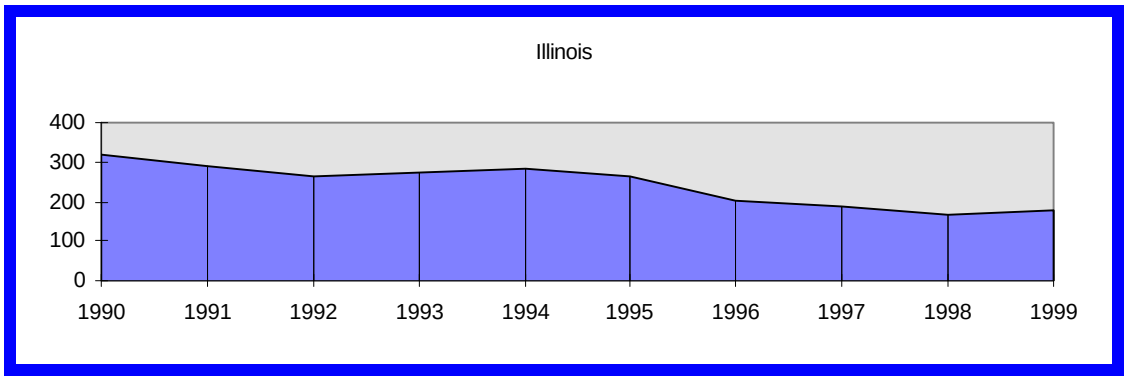
On January 13, 2000, the Federal Railroad Administration issued a Notice of Proposed Rulemaking to implement the 1994 Swift Rail Act. This federal law and proposed rule would require that trains sound their horns at all grade crossings unless supplemental safety measuresare installed at those crossings. The FRA rule would preempt state and municipal laws and ordinances which have historically governed whistle blowing at grade crossings. The FRA rule may result in a substantial shift of Grade Crossing Protection Fund money away from the safety projects listed in this 5 year program, which includes many unprotected crossings. Adverse public reaction to train noise may cause these funds to be redirected to further pay for additional layers of protection for crossings in northeastern Illinois which are already protected with active warning systems.

1999 COLLISIONS AND FATALITIES

In 1999, there were a total of 179 collisions at public crossings in Illinois (175 at highway-rail crossings and four at pedestrian crossings) ten more than the previous year, and the first increase in the number of collisions since 1993. Preliminary figures indicate 2,777 such collisions occurred nationally during 1999, which is an 8.35% reduction from 1998. As can be seen from the following charts, the trend, recognizing 1999's figures as an exception, both nationally and in Illinois is a steady decrease in collisions.

COLLISIONS AT PUBLIC CROSSINGS





The public commonly thinks of grade crossing collisions as involving trains colliding with cars, and in a majority of incidents that is the case. However, each year a substantial number of collisions involve motor vehicles driving into the sides of trains. In 1999 almost 25% of the incidents were cars driving into the sides of trains, a percentage which has remained fairly constant over the years. The 45 vehicle-train collisions in 1999 resulted in 6 fatalities.

Total fatalities resulting from all collisions increased from 30 in 1998 to 51 in 1999. That number includes the 11 railroad passengers killed in the collision between an Amtrak train and a tractor-trailer in March 1999 in Bourbonnais (Kankakee County). Fatality statistics, however, are not a particularly effective unit of measurement for evaluating safety programs. This is due to the fact that fatalities are a byproduct of the events the Grade Crossing Protection Fund is used to prevent in the first place, i.e., the collisions. Fatalities are a function of random events, such as how many occupants are riding in a vehicle involved in a collision, or as in this past year, the death of 11 people in one incident. If the collision is prevented, so are the fatalities. Table D illustrates the distribution of fatalities by collision type in 1999.

TABLE D
1999 Collisions and Fatalities by Type

COLLISION TYPE	TOTAL COLLISIONS	FATAL COLLISIONS	TOTAL FATALITIES
Pedestrian	13	8	8
Train-Vehicle	121	23	37

Vehicle-Train	45	5	6
	179	36	51


RAIL
CROSSING
ROAD

Appendix 1
FY 2001 Projects Listed by County
(Projects expected to be undertaken in FY 2001)

Appendix 2
FY 2002 - 2005 Projects Listed by County

(Projects which are expected to be undertaken
in FY 2002-2005)

Appendix 3
Active Projects Listed by County
(Projects currently under Commission order but not yet completed)

Appendix 4
FY 2000 Pending Projects

(Projects expected to be submitted for Commission order by end of FY 2000)